DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Casey, William
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-026746
Date Inspected: 21-Nov-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Jobsite

CWI Name:	As noted below			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS OBG

Summary of Items Observed:

Quality Assurance Inspector (QA) Douglas Frey was at the American Bridge/Fluor (ABF) job site at Yerba Buena Island in California between the times noted above in order to monitor Quality Control functions and the in process work being performed by ABF personnel. The following items were observed:

1. 14E/PP125/E4 Lifting Lug Hole E3 (Exterior)
2. 14W/PP/125.7/W3.2 Vent Hole (Exterior)
3. 14W/PP126.7/W3.7 Vent Hole (Interior)
4. 14E/PP126.7/E2.7 Vent Hole Repair (Exterior)

Orthotropic Box Girder (OBG) section: The QC Documents observed being used by this QA Inspector for the following weld joints appeared to be designated as Seismic Performance Critical Members (SPCM).

1. 14E/PP125/E4 Lifting Lug Hole E3 (Exterior)

This QA Inspector randomly observed ABF welder Eric Sparks (ID 3040) performing the Shielded Metal Arc Welding (SMAW) process in the (1G) flat position on “A” deck lifting lug hole 14E/PP125/E4/E3. This QA Inspector observed QC Inspector Fred Von Hoff perform Magnetic Particle Testing on the root pass to ensure soundness of the weld. (The root pass was completed on 11/19/2001 near the end of that dates shift). This QA Inspector observed the QC Inspector verify that the preheat temperature was at the minimum of 10 degrees C and that the welding parameters were in accordance with ABF-WPS-D15-1050A-CU. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was completed on this

date and appeared to be in general compliance with the contract specifications.

14E/PP125/E3 Lifting Lug Hole E3 (Exterior)

This QA Inspector randomly observed the in process welding of lifting lug hole E3 at 14E/PP125/E3. The SMAW process in the (1G) flat postion was performed by ABF welder Salvador Sandoval (ID 2202) utilizing E7018-H4R electrodes with amperage of 136. This QA Inspector observed the QC Inspector measure inter-pass temperatures and monitor the welding to insure the welding parameters were in accordance with ABF-WPS-D15-1050A-CU. This QA Inspector made periodic observations to monitor quality and noted that the work was completed on this date and appeared to be in general conformance with the contract specifications.

2. 14W/PP125.7/W3.2 Vent Hole (Exterior)

This QA Inspector made random observations of ABF welder Mike Jimenez (ID 4671) perform the Shielded Metal Arc Welding process (SMAW) in the 1G flat position on Vent Hole (VH) 14W/PP125.7/W3.2. This QA Inspector observed QC Inspector Sal Merino measure the pre-heat temperature to verify a minimum of 10°C was achieved. This QA Inspector also observed the QC Inspector monitoring the welding and verifying that the parameters were in compliance pertaining to ABF-WPS-D15-1050A-CU. The parameters were recorded as (Amperes=230) utilizing a 4.0 mm E7018-H4R electrode. During in process welding, this QA Inspector noted that the QC Inspector measured the inter-pass temperatures to maintain a heat range below 230°C. This QA Inspector made subsequent observations during the shift and noted that the work was completed on this date and appeared to be in general conformance to the contract specifications.

14W/PP128/W4 Lifting Lug Hole Repair (Interior)

This QA Inspector randomly observed ABF welder Jorge Lopez performing the back-gouge operation of ultrasonic rejectable indications on “A” deck Lifting Lug Hole 14W/PP128/W4/W4 located at "Y" 210 mm: (30 mm wide; 230 mm length; and 13 mm in depth) “Y” 608 mm: (20 mm wide; 110 mm length; and 10 mm in depth) “Y” 100 mm: (20 mm wide; 50 mm length; and 8 mm in depth). This QA Inspector observed QC Inspector Sal Merino perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector verified that no rejectable indications were present.

This QA Inspector randomly observed ABF welder Jorge Lopez (Welder ID 6149) performing the repair welding operation of three (3) ultrasonic indications as per the Shielded Metal Arc Welding (SMAW) process in the (4G) overhead position on “A” deck Lifting Lug Hole 14W/PP128/W4/W4. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector William Sherwood verify that the preheat temperature was at the minimum of 10 degrees C and that the welding parameters (Amps=135) were in accordance with WPS D1. 5–1004- Repair. The welding parameters observed at this location appeared to be in general compliance with approved WPS and the contract specifications. Upon completion of the repair, a thermal induction blanket was placed over the area for Post Weld Heat Treatment (PWHT) at 450 degrees F for 1 hour.

3. 14W/PP126.7/W3.7 Vent Hole (Interior)

This QA Inspector randomly observed QC Inspector Sal Merino perform a final Magnetic Particle (MT)

inspection of the completed weld area on OBG “A” deck vent hole section 14W/PP126.7/W3.7. This QA Inspector observed that Mr. Merino found no rejectable indications and the work appeared to be in general conformance with the contract specifications.

14W/PP126.7/W2.9 Vent Hole (Interior)

QC Inspector Sal Merion performed a final MT inspection on face “B” of vent hole 14W/PP126.7/W2.9 on the interior of the OBG. This QA Inspector observed that the QC Inspector found no rejectable indications and the work appeared to be in general conformance with the contract specifications.

4. 14E/PP126.7/E2.7 Vent Hole Repair (Exterior)

This QA Inspector randomly observed ABF welder Rick Clayborn (ID 2773) performing the repair welding operation of an excavation as per the Shielded Metal Arc Welding (SMAW) process in the (1G) flat position on “A” deck Vent Hole 14E/PP126.7/E2.7. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Bernie Docena verify that the preheat temperature was at the minimum of 10 degrees C and that the welding parameters (Amps=135) were in accordance with WPS D1.5–1004- Repair. Upon completion of the repair, PWHT was performed at the specified temperature for a period of 1 hour.

14W/PP126.7/W2.7 Vent Hole (Interior)

This QA Inspector randomly observed QC Inspector Sal Merino perform a final Magnetic Particle (MT) inspection of the completed weld area on OBG “A” deck vent hole section 14W/PP126.7/W2.7. This QA Inspector observed that Mr. Merino found no rejectable indications and the work appeared to be in general conformance with the contract specifications.

14W/PP125.7/W3.2 Vent Hole (Exterior)

This QA Inspector randomly observed QC Inspector perform fit-up operations on vent hole 14W/PP125.7/W3. 2. The QC Inspector utilized a Bridge Cam Gauge to measure the planar offset to be within + or – 1 mm from “A” deck and this QA Inspector verified the fit-up as acceptable and employed a 65°C Tempilstik to ensure the minimum pre-heat temperature had been achieved. This QA Inspector randomly observed ABF welder Mike Jimenez (welder ID 4671) performing the Shielded Metal Arc Welding (SMAW) process in the (1G) flat position and observed the QC Inspector verify the welding parameters were in accordance with ABF-WPS-D15-1050A-CU. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was completed on this date and appeared to be in general compliance with the approved WPS and the contract specifications.

14E/PP125/E3/E4 Lifting Lug Hole (Exterior)

This QA Inspector observed QC Inspector Fred Von Hoff utilize a Bridge Cam Gage to measure the fit-up of the 20 mm plate in the B-U-4a joint on lifting lug hole 14E/PP125/E3/E4. This QA Inspector verified the fit-up as acceptable and employed a 65°C Tempilstik to ensure the minimum pre-heat temperature had been achieved. This QA Inspector randomly observed ABF welder Salvador Sandoval (ID 6149) performing the Shielded Metal Arc

Welding (SMAW) process in the (1G) flat position and observed the QC Inspector verify the welding parameters were in accordance with the above mentioned WPS. This QA Inspector made subsequent observations throughout the shift to monitor quality and noted that the work was completed on this date and appeared to be in general compliance with the approved WPS and the contract specifications.

14E/PP126.2/E3.2 Vent Hole Repair (Interior)

This QA Inspector randomly observed ABF welder Jorge Lopez performing the back-gouge operation of an ultrasonic rejectable indication on “A” deck Lifting Lug Hole 14W/PP128/W4/W4 located at "Y" 400 mm: (25 mm wide; 50 mm length; and 11 mm in depth). This QA Inspector observed QC Inspector Bernie Docena perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector verified that no rejectable indications were present.

This QA Inspector randomly observed ABF welder Rick Clayborn (ID 2773) performing the repair welding operation of an excavation as per the Shielded Metal Arc Welding (SMAW) process in the (1G) flat position on “A” deck Vent Hole at the above named location.. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Bernie Docena verify that the preheat temperature was at the minimum of 10 degrees C and that the welding parameters were in accordance with WPS D1.5–1004- Repair. Upon completion of the repair, PWHT was performed at the specified temperature for a period of 1 hour.

14E/PP126.2/E3.7 Vent Hole (Interior)

This QA Inspector randomly observed ABF welders Rick Clayborn perform back-gouge operations on face “B” on the interior of the OBG. This QA Inspector observed QC Inspector Bernie Docena perform MT testing to ensure the soundness of the metal. This QA Inspector randomly observed the welder perform SMAW in the (4G) overhead position with the QC Inspector monitoring the welding to insure the parameters were in accordance with ABF-WPS-D15-1050A-CU. This Q Inspector made subsequent observations throughout the shift to monitor quality and noted that the work is in progress and appeared to be in general accordance with the contract documents.

14W/PP126.7/W3.7 Vent Hole Repair (Exterior)

This QA Inspector randomly observed ABF welder Jorge Lopez performing the back-gouge operation of ultrasonic rejectable indications on “A” deck Vent Hole 14W/PP126.7/W3.7 located at "Y" 500 mm: (20 mm wide; 120 mm length; and 11 mm in depth) “Y” 50 mm: (25 mm wide; 190 mm length; and 10 mm in depth) “Y” 100 mm: (20 mm wide; 50 mm length; and 8 mm in depth). This QA Inspector observed QC Inspector Sal Merino perform a Magnetic Particle Inspection (MT) of the excavation to determine the soundness of the metal. Upon completion of the testing this QA Inspector verified that no rejectable indications were present.

This QA Inspector randomly observed ABF welder Jorge Lopez performing the repair welding operation of an excavation as per the Shielded Metal Arc Welding (SMAW) process in the (1G) flat position on “A” deck Vent Hole at the above named location. This QA Inspector observed the use of E7018-H4R electrodes and QC Inspector Sal Merino verify that the preheat temperature was at the minimum of 10 degrees C and that the welding parameters were in accordance with WPS D1.5–1004- Repair. Upon completion of the repair, PWHT was

performed at the specified temperature for a period of 1 hour.

Note: The QAI reviewed the observations and inspection with QA Lead Inspector, Daniel Reyes, written in this report. No issues were noted by the QAI and the QA Lead Inspector concurs with the QA report.

Summary of Conversations:

The were no pertinent conversations to report.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910 , who represents the Office of Structural Materials for your project.

Inspected By:	Frey,Doug	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer